

**REMARKS**

The Examiner is thanked for the due consideration given the application.

Claims 1-21 are pending in the application. Acknowledgement of the allowability of claims 8 and 9 is noted with appreciation. Support for the amendments to claim 6 can be found in the specification at, e.g., page 9, line 32 to page 10, line 6 and page 12, lines 20-28.

No new matter is believed to be added to the application by this amendment.

**Rejections Based on DADD**

Claims 6 and 10 have been rejected under 35 USC § 102(b) as being anticipated by DADD (U.S. Patent 4,230,571). Claims 1, 3-5, 7 and 11-21 have been rejected under 35 USC § 103(a) as being unpatentable over DADD in view of KAWAI et al. (U.S. Patent 4,863,608). These rejections are respectfully traversed.

The present invention pertains to a method for treating liquids that can use, by way of example, the apparatus illustrated in Figure 3 of the application, which is reproduced below.

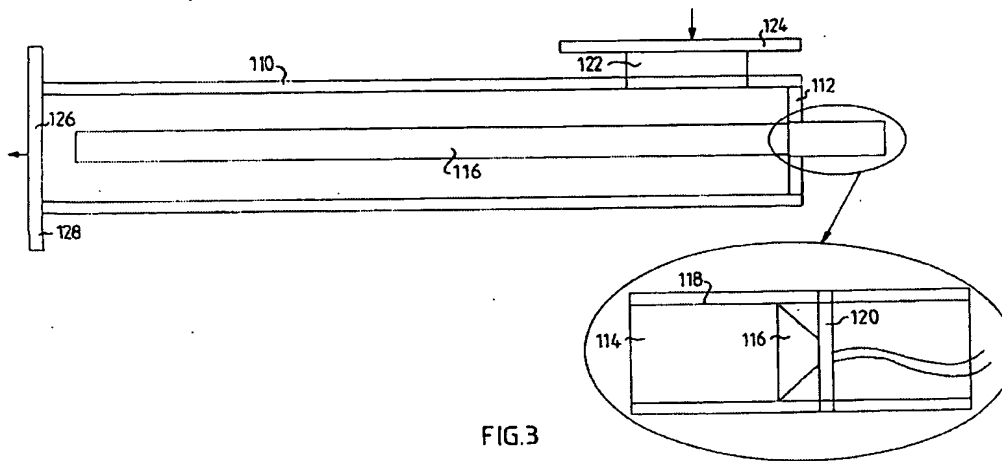


Figure 3 shows a UV light source 116 that directly irradiates a catalyst, which can be a titanium oxide film coating the inside of a pipe 110. Claim 1 of the present invention recites "irradiating the flow of liquid containing the in-mixed ozone in order to break down the ozone in the liquid for producing free radicals," and "exposing the fluid to at least one catalyst at the same time as the ozone is broken down for increasing the amount of free radicals."

DADD pertains to ozone/ultraviolet water purification. The Official Action refers to Figure 2 of DADD, which is reproduced below.

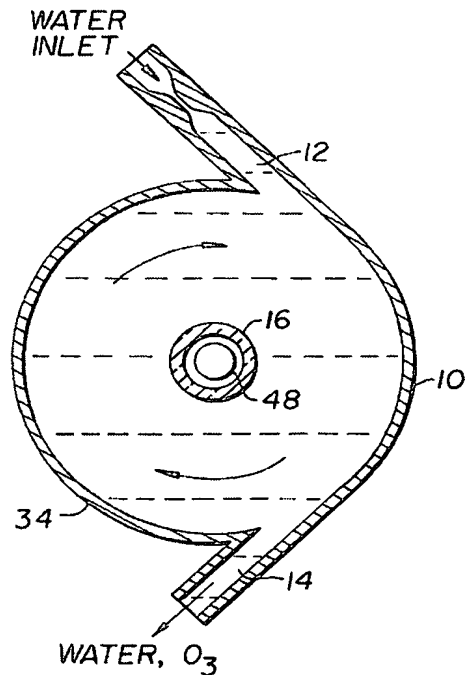
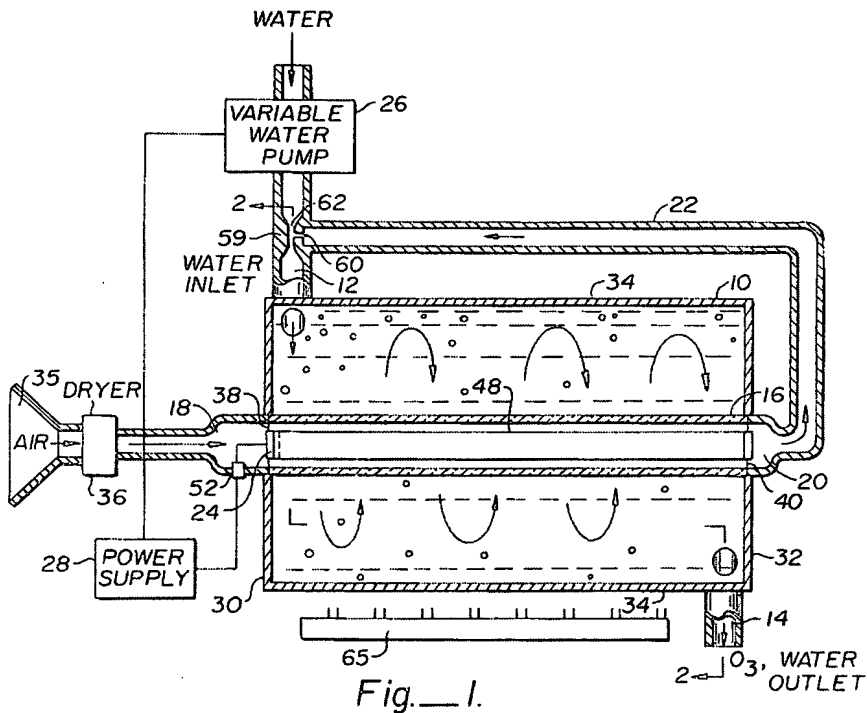


Fig. 2.

Figure 2 of DADD shows a water inlet 12, a water outlet 14 and a conduit 16. In the conduit 16 is the glass tube 48 of an ultraviolet light.

DADD thus pertains to a method of purifying water wherein air is radiated by a UV radiating means for creating ozone in the air. This air is then mixed with water to be treated. The water mixed with ozone is then irradiated by the UV radiating means.

In this way, a double action is obtained in that ozone acts directly to kill bacteria and viruses in the water and whereby the UV radiation acts as a catalytic effect on the reaction of the ozone. This is illustrated in Figure 1 of DADD, reproduced below.



However, there are at least two features of claim 1 of the present invention lacking in DADD, where one is the creation of radicals by breaking down ozone. In contrast to DADD, the aim of the present invention is to utilize the free radicals as the main treatment component, and not the ozone. The ozone is merely an intermediate step in creating the radicals.

Also, DADD secondly fails to mention at all the use of catalysts for increasing the amount of radicals.

According to the Official Action, the use of catalysts are disclosed in KAWAI et al. KAWAI et al. disclose using a photocatalyst formed from an inorganic semiconductor selected from  $\text{TiO}_2$ ,  $\text{SrTiO}_3$  or  $\text{CdS}$  in fine particulate form, and a noble

metal and/or an oxide deposited on the semiconductor. For purifying water it, is irradiated with UV light in the presence of the semiconductor in order to decompose organic impurities in the water.

The only connection of features between KAWAI et al. and DADD that a skilled person would recognize is the treatment of water with UVV radiation. KAWAI is completely silent regarding creation of ozone and is thus silent regarding the use of catalysts in connection with ozone for creating and increasing the amount of radicals.

In contrast, the radicals are an important treatment component of the present invention, and this is not mentioned at all in DADD or KAWAI et al.

DADD thus fails to anticipate a claimed embodiment of the present invention. One of ordinary skill and creativity would fail to produce a claimed embodiment of the present invention from a knowledge of DADD and KAWAI et al., and a *prima facie* case of unpatentability has thus not been made.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

### **Conclusion**

Prior art of record but not utilized is believed to be non-pertinent to the instant claims.

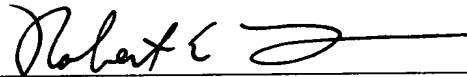
It is believed that the rejections have been overcome, obviated or rendered moot, and that no issues remain. The

Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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